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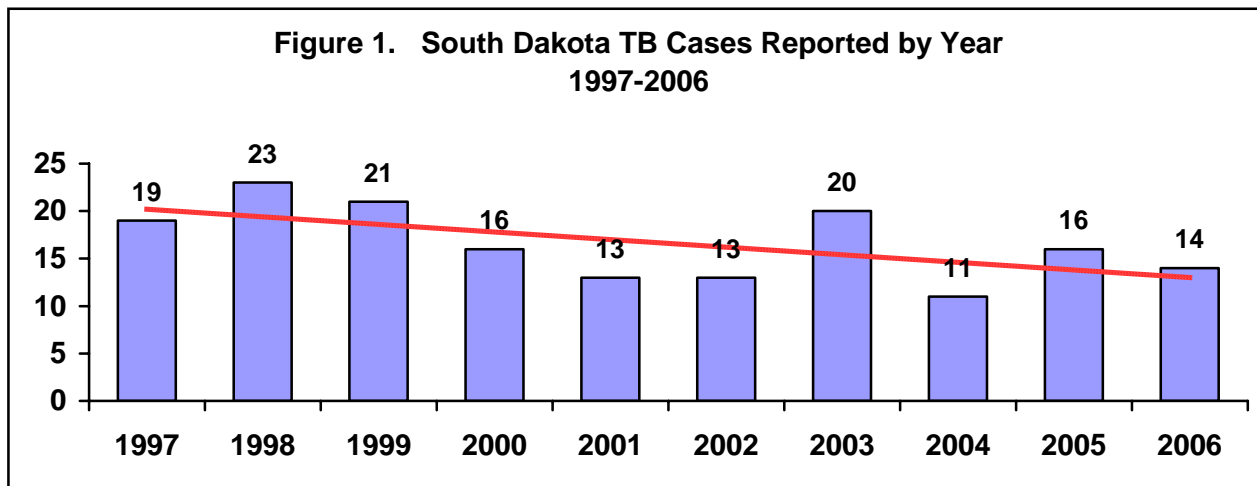
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2006 South Dakota tuberculosis morbidity

by Kristin Rounds, Tuberculosis Control Coordinator

Office of Disease Prevention, South Dakota Department of Health

During the last ten years, South Dakota averaged 17 cases of tuberculosis (TB) per year. During 2006, there were 14 cases of TB reported to the South Dakota Department of Health, which is a decrease of 2 cases from 2005. Figure 1 describes the 10-year trend of decreasing TB case reports.



The most recent data available nationally and regionally is from calendar year 2005. Figure 2 provides a comparison of the TB case rate per 100,000 population for the United States as well as a regional comparison of South Dakota to our border states of North Dakota, Minnesota, Iowa, Nebraska, Wyoming and Montana. Please note that South Dakota has the second highest TB case rate behind Minnesota when comparing these 7 states.

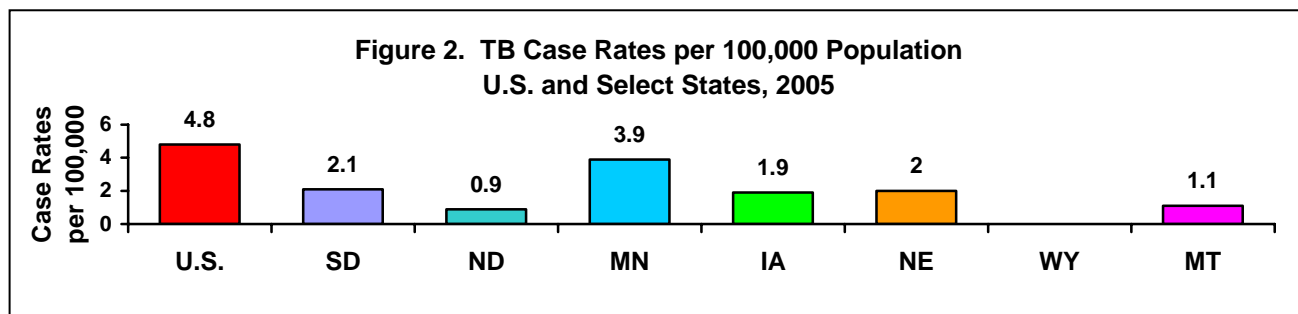
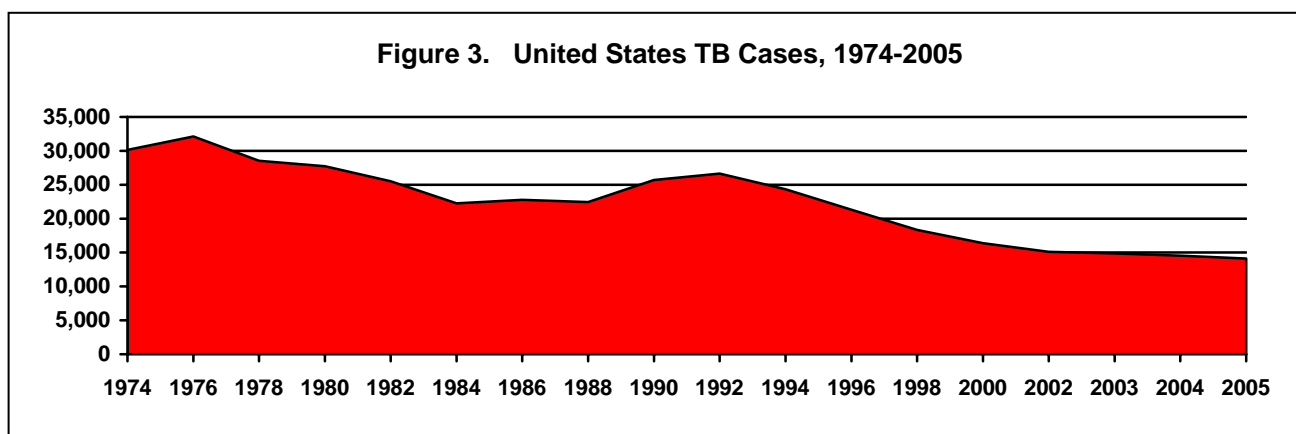


Figure 3 illustrates the historical trend of decreasing TB cases reported in the United States. In 2005 there were 14,097 TB cases reported in the US which was the lowest year on record, representing a 2.9% decrease from 2004.

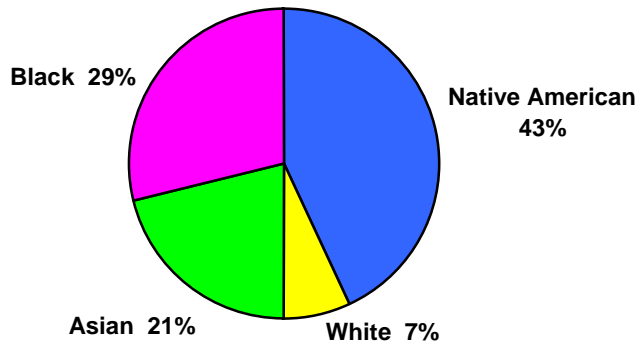


Native Americans have historically represented the highest percentage of TB cases by race. This trend continued in 2006 with Native Americans contributing 43% of the total TB cases reported. However, the percentage of Native American TB cases has dropped considerably in the last 10 years from 1997 when they represented 74% of the total cases reported. This decreasing trend is explained in part by the increasing trend of more foreign-born TB cases reported in South Dakota. Table 1 and Figure 4 provide additional information on TB cases by race in 2006.

Table 1. TB Cases Reported by Sex and Race, SD 2006

Race	Male	Female	Total	% of Cases
Native American	3	3	6	43%
White	1	0	1	7%
Black	3	1	4	29%
Hispanic	0	0	0	0%
Asian	1	2	3	21%
Total	8	6	14	100%

Figure 4. South Dakota TB Cases by Race, 2006



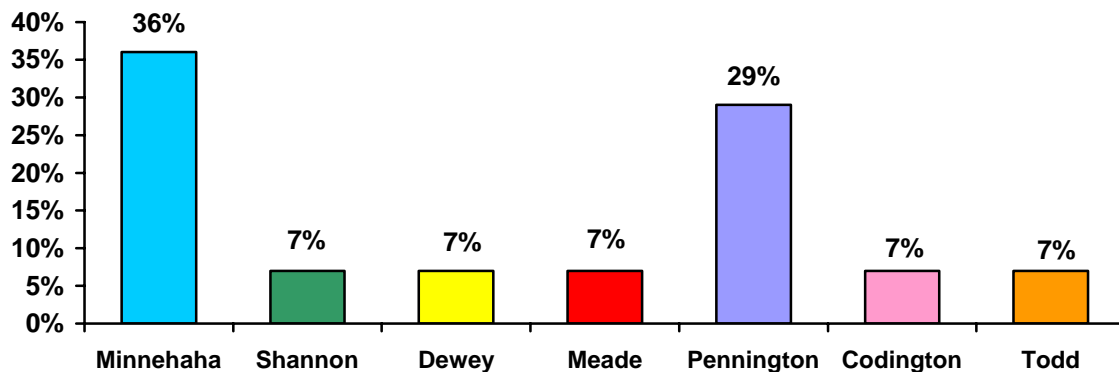
The TB incidence rate, which measures the number of TB cases per 100,000 population, is the best measure for determining the progress towards the elimination of TB in South Dakota. Native American TB case rates have dropped considerably while white cases have consistently remained low. The black, Asian and other races mainly represent TB cases born outside of the United States who were diagnosed in South Dakota. Table 2 provides additional information on TB case rates for the last 6 years.

Table 2. TB Morbidity Incidence Rates Per 100,000 by Race and Year, SD 2001-2006

Race	2001	2002	2003	2004	2005	2006
US Case Rate (All Races)	5.6	5.2	5.1	4.9	4.8	Not available
SD All Races	1.7	1.7	2.6	1.5	2.1	1.9
SD Native American	5.9	16.1	14.6	7.3	8.8	8.8
SD White	0.4	0.3	0.9	0.6	0.6	0.1
SD Black	48.4	0.0	0.0	0.0	48.4	64.5
SD Asian	17.4	0.0	69.4	0.0	52.1	52.1
All Other SD Races	38.5	0.0	0.0	41.3	0.0	0.0

**2006 US case rate data is not yet available.*

**Figure 5. TB Cases Reported by County of Residence
South Dakota 2006**

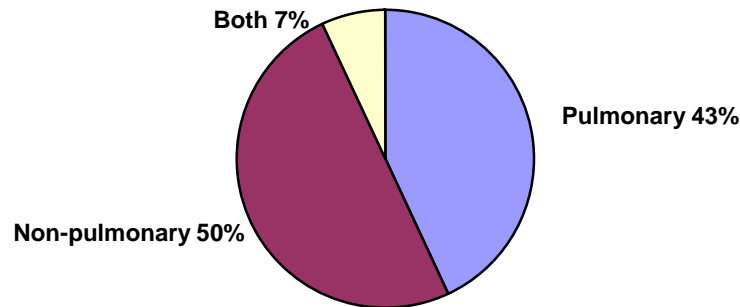


Tuberculosis cases in South Dakota have historically been located in a few geographic locations that consistently report the highest number of TB cases. These include Minnehaha County which reports the most number of foreign-born TB cases and Shannon, Todd and Pennington counties which report the highest number of Native American TB cases. However, every year there are additional counties throughout the state that report active TB cases representing isolated cases. Figure 5 and Table 3 provide additional information on the counties of residence of the TB cases in 2006.

Table 3. TB Cases Reported by County of Residence, SD 2006

County	# of TB Cases	County	# of TB Cases
Codington	1	Pennington	4
Dewey	1	Shannon	1
Meade	1	Todd	1
Minnehaha	5		

Tuberculosis remains primarily a pulmonary disease with approximately 85% of cases nationally being reported as pulmonary disease and 15% as non-pulmonary disease. South Dakota has historically reported a higher percentage of non-pulmonary TB disease as described in Figure 6. The non-pulmonary sites of disease in 2006 include the following: lymph node, spinal, renal, eye, peritoneal and paraspinal tissue.

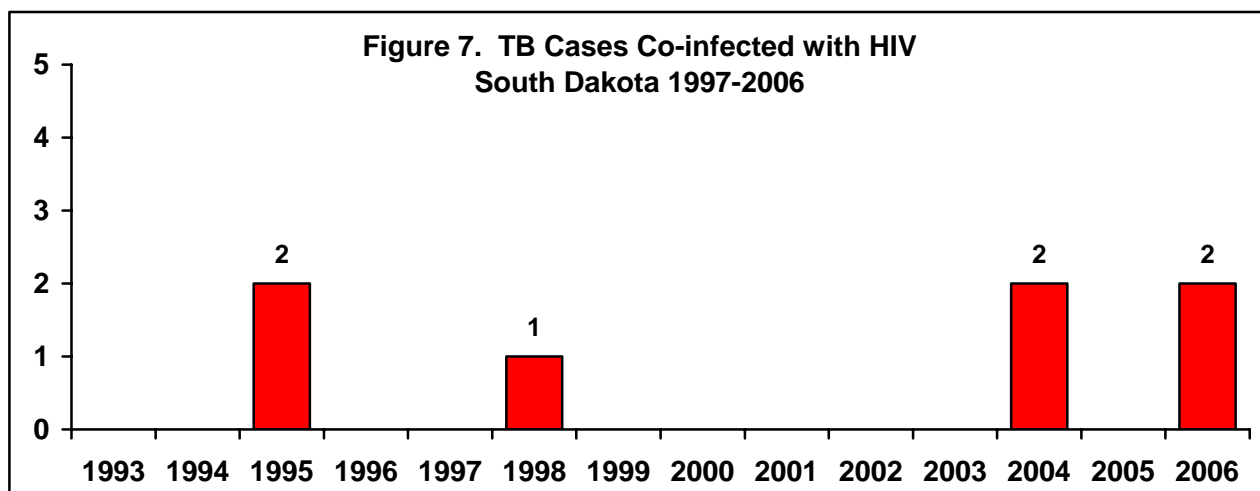
Figure 6. Percentage of Pulmonary versus Non-pulmonary South Dakota 2006

The average age of the TB case in 2006 was 45 years of age. However, this varied by sex with male TB cases being younger at 33 years and the female TB cases being older at 54 years of age. In addition, TB cases born outside the United States tended to be younger with the average age of 38 years while the US born TB cases were older at 54 years of age. Table 4 provides additional information on the age at diagnosis for the TB cases reported in 2006.

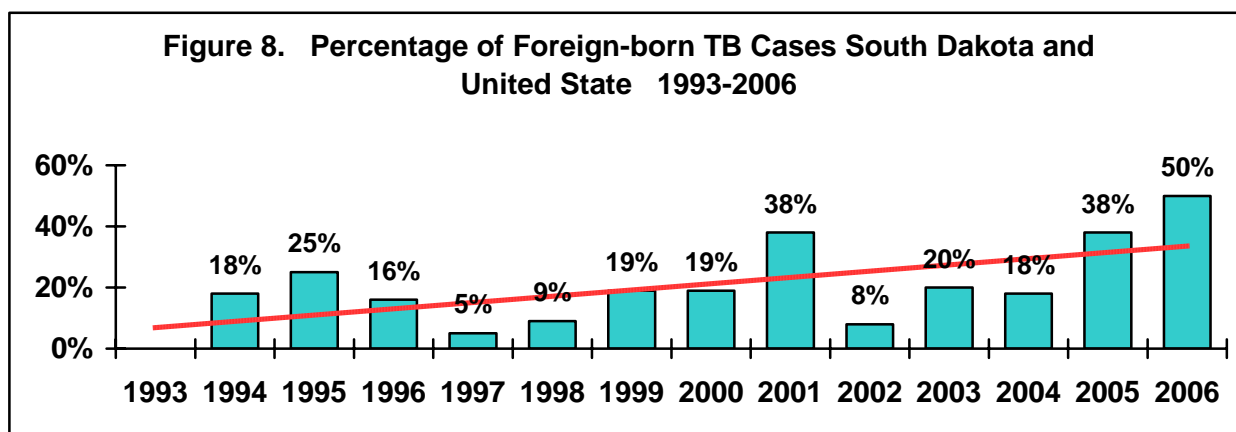
Table 4. TB Cases Reported By Sex And Age, SD 2006

Age (years)	Male	Female	Total	% of cases
0-4	0	0	0	0%
5-9	1	0	1	7%
10-14	0	0	0	0%
15-19	0	0	0	0%
20-29	2	1	3	22%
30-39	1	1	2	14%
40-49	2	1	3	22%
50-59	1	1	2	14%
60-69	0	1	1	7%
70-79	1	0	1	7%
80-89	0	1	1	7%
90+	0	0	0	0%
Total	8	6	14	100%

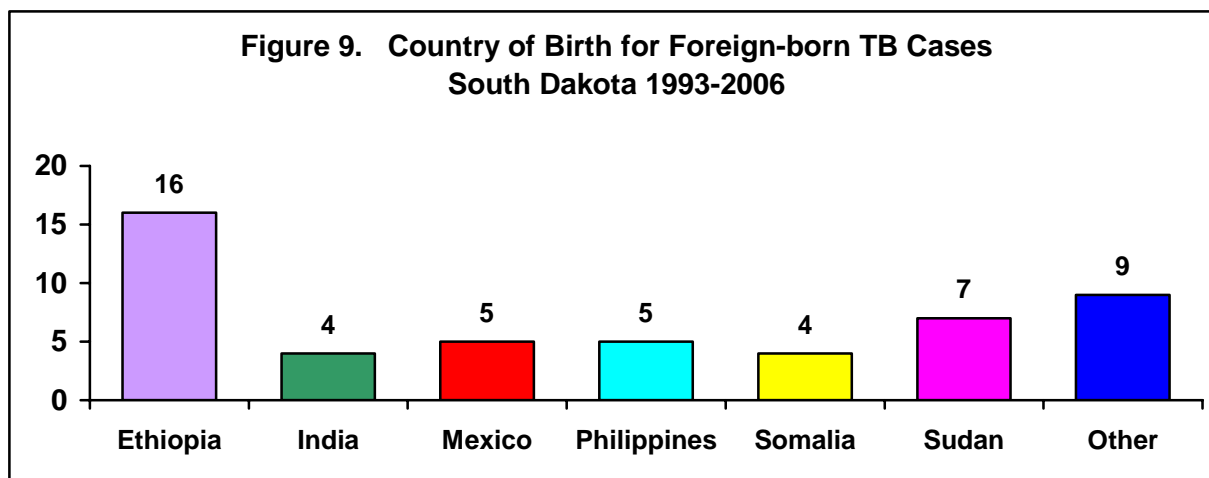
Co-infection with HIV is an important risk factor for the development of active TB. Because of this, all TB cases diagnosed in South Dakota aged 25-44 years of age are offered HIV testing. Co-infected TB cases require more monitoring for toxicity and frequently treatment with second line drugs. Figure 7 describes the number of TB cases co-infected with HIV since 1993 showing that these cases remain uncommon with only 7 reported during this 14 year time period.



Tuberculosis cases who were born outside the United States continue to represent a larger and increasing percentage of TB cases in the United States as well as in South Dakota. During 2006, 50% of the TB cases reported in South Dakota were foreign-born which represents the highest percentage of foreign-born TB cases ever reported in South Dakota. Figure 8 describes this increasing percentage of foreign-born TB cases in South Dakota.

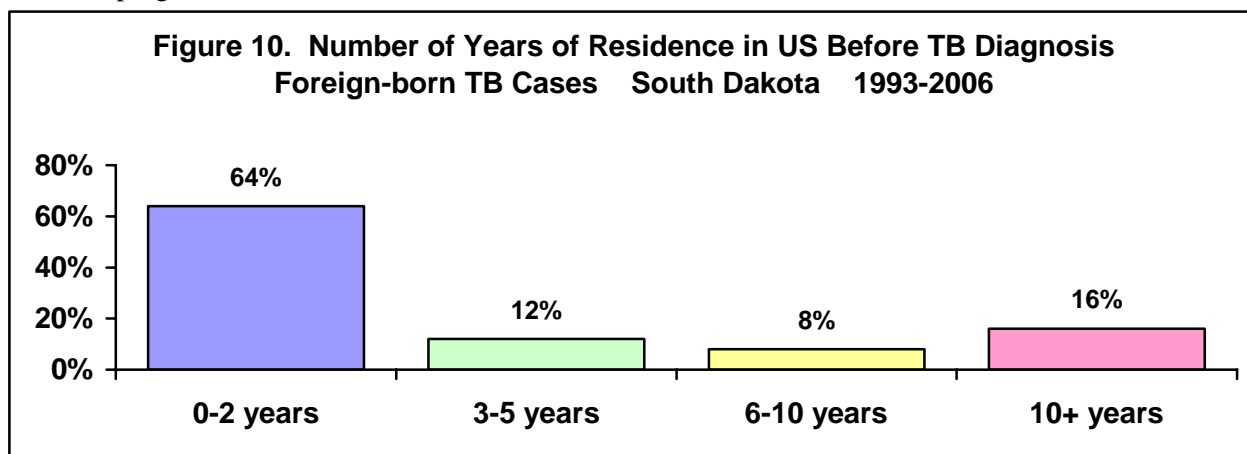


Foreign-born TB cases continue to come from many areas of the world however the majority of the cases reported in South Dakota are of African descent. Figure 9 describes the country of birth for the foreign-born TB cases reported in South Dakota since 1993. Countries of birth for the “other” category include Afghanistan, China, Indonesia, Romania, Russia, South Africa and Vietnam.

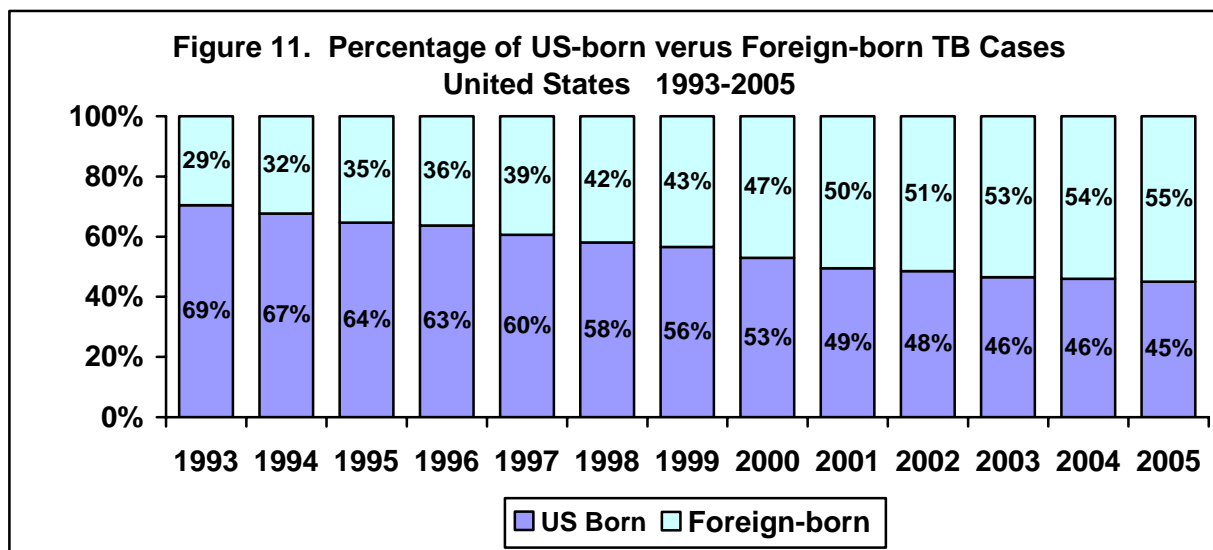


Most foreign-born persons who develop active TB usually do so within the first 2 years after arrival in the United States. Figure 10 describes that 64% of foreign-born TB cases since 1993 developed active TB

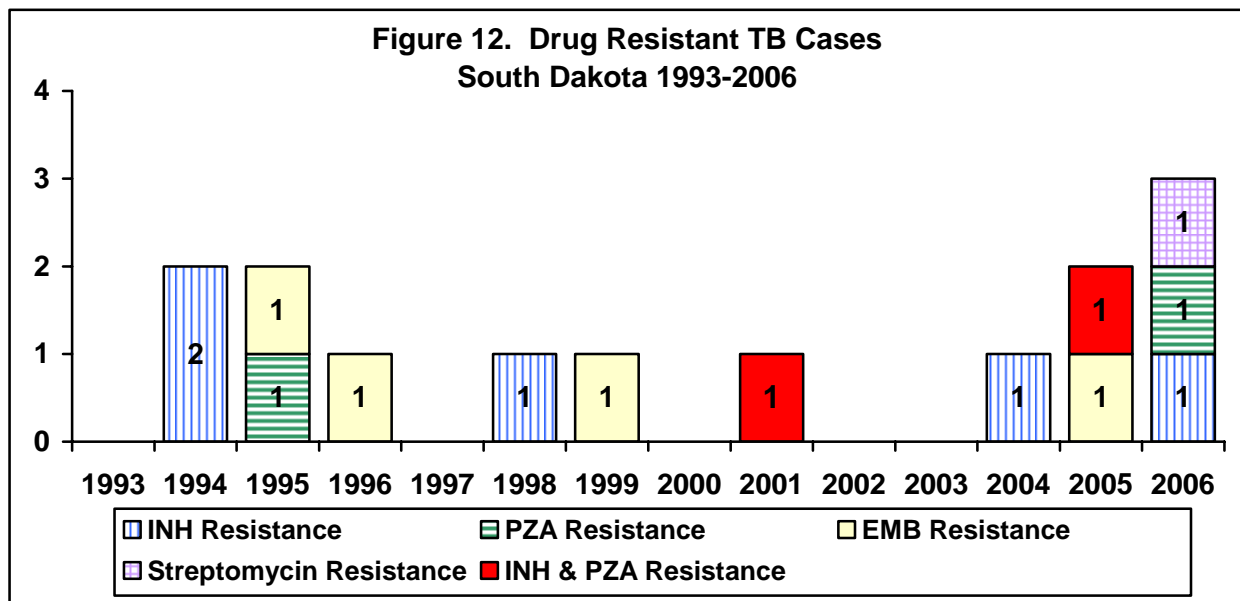
within the first 2 years of their arrival. Because of this increased risk of development of active TB, these individuals are targeted for preventive activities including targeted TB skin testing and preventive treatment programs.



Foreign-born TB cases represent a unique challenge to the South Dakota TB Control Program because of cultural issues, language barriers and a greater likelihood of drug resistance. As these cases continue to increase in South Dakota, additional time and resources will need to be dedicated to address these unique issues. Figure 11 describes the ever increasing trend of the percentage of foreign-born TB in the United States since 1993.



All culture positive TB cases are tested for resistance to first-line TB medication including INH (isoniazid), RIF (rifampin), PZA (pyrazinamide), EMB (ethambutol) and SM (streptomycin). Patients with single drug resistance can usually be successfully treated for their TB disease. Multi-drug resistant TB (defined by CDC as resistance to at least INH and RIF) is a significant public health problem because of the difficulty in achieving a successful treatment outcome. Figure 12 describes the drug resistant TB cases since 1993 illustrating that South Dakota has most often had single drug resistant cases reported. No multi-drug resistant TB cases have ever been reported in South Dakota although one INH and PZA resistant TB case was reported in 2001 and again in 2005.



South Dakota has reported a higher than expected mortality rate during certain years, especially among Native American patients. Table 5 describes the mortality rates for the last 4 years.

Table 5. TB Mortality By Race and Year, SD 2003-2006

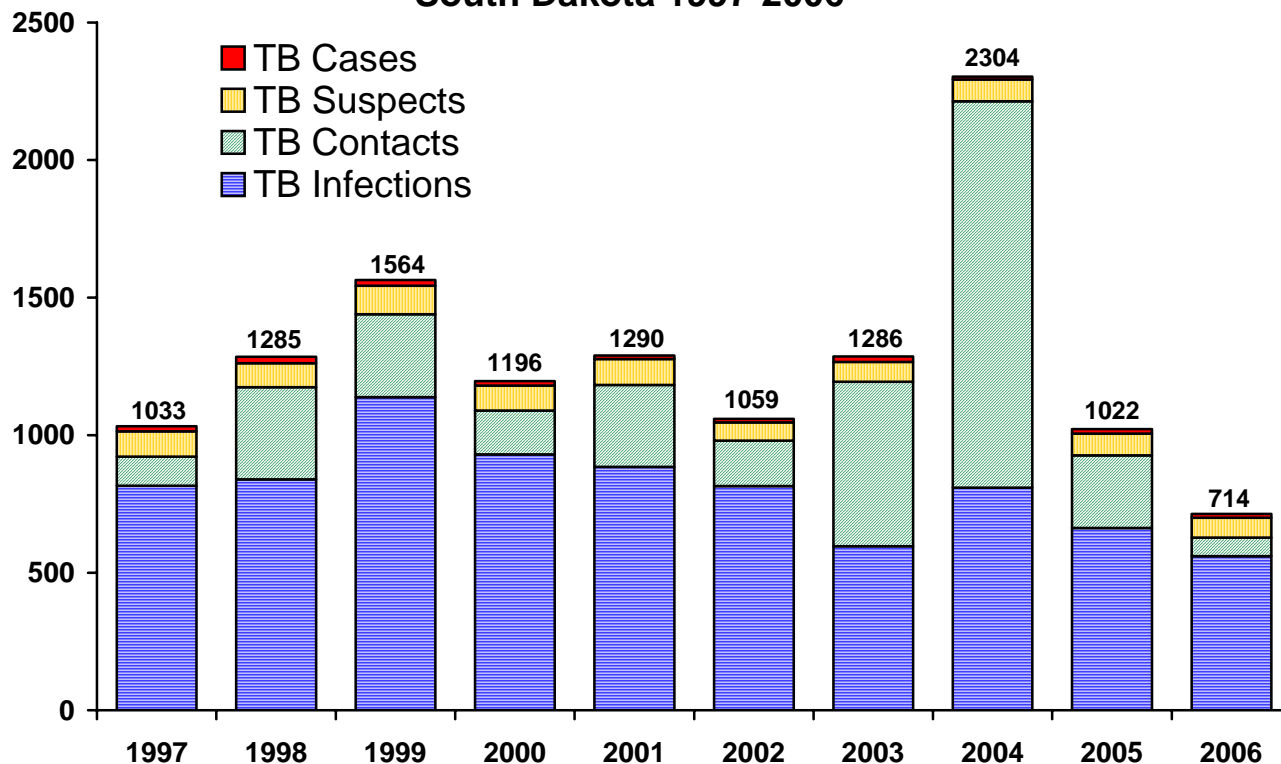
Race	2003		2004		2005		2006	
All races	4/20	20%	1/11	9%	3/16	19%	2/14	14%
Native American	4/10	40%	1/5	20%	3/6	50%	2/6	33%
White	0/6	0%	0/4	0/5	0/4	0%	0/1	0%
Black	---	---	---	---	0/3	0%	0/4	0%
Hispanic	---	---	0/2	0%	---	---	---	---
Asian	0/4	0%	---	---	0/3	0%	0/3	0%

The workload in the TB Control Program includes four categories of patients:

- 1) **TB cases** (persons diagnosed with active TB)
- 2) **TB suspects** (persons suspected of active TB with a pending diagnosis)
- 3) **TB contacts** (persons confirmed to have been exposed to an infectious TB case)
- 4) **Latent TB infection** (persons reported with a positive TB skin test)

All of these conditions are reportable to the TB Control Program and are initiated for investigation. Disease Intervention Specialist (DIS) staff are responsible for ensuring appropriate investigation, treatment and follow-up of these individuals statewide. Figure 13 describes this cumulative caseload which is divided among 19 DIS staff illustrating that the active TB cases and suspect TB cases represent the smallest number of patients reported. TB contacts and patients with latent TB infection make up the greatest percentage of assigned workload for DIS staff within the TB Control Program.

**Figure 13. Cumulative # of TB Investigations by DIS
South Dakota 1997-2006**



Providing for appropriate treatment and follow-up of active TB cases and suspects is the highest priority of the South Dakota Department of Health TB Control Program. However, in order to achieve TB elimination in South Dakota, an emphasis must be made on preventing future cases of TB. This is accomplished by follow-up of persons infected with latent TB infection (LTBI). These individuals are infected with the TB bacteria (*Mycobacterium tuberculosis*) but have not yet developed an active form of the disease. By finding and treating these individuals, future TB cases can be prevented and therefore the TB Control Program dedicates time and resources to this preventive strategy.

**Figure 14. Number of Persons Reported with
Latent TB Infection South Dakota 1997-2006**

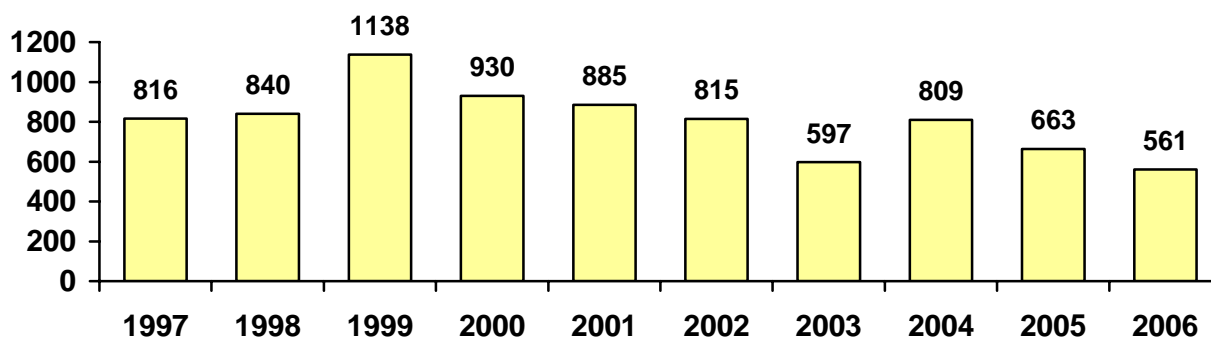


Figure 14 presents the number of patients reported with latent TB infection (positive TB skin tests) over the last 10 years. All of these individuals have the potential to develop active TB disease and potentially be infectious to others.

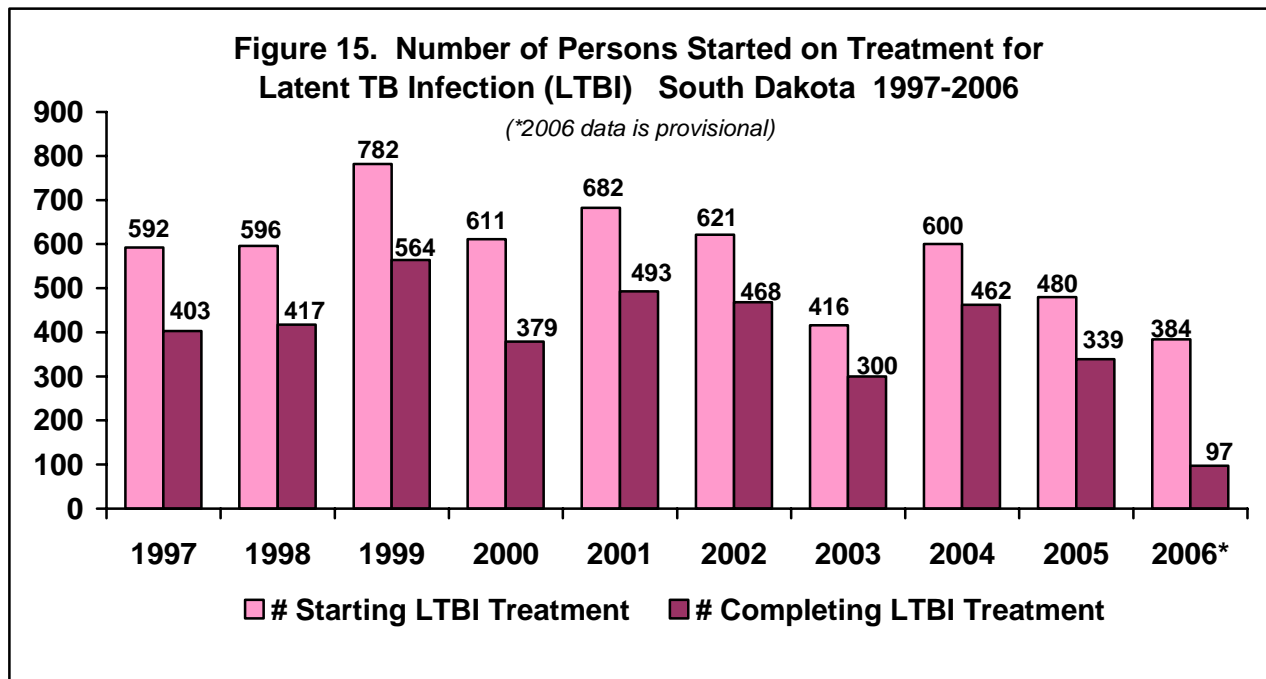
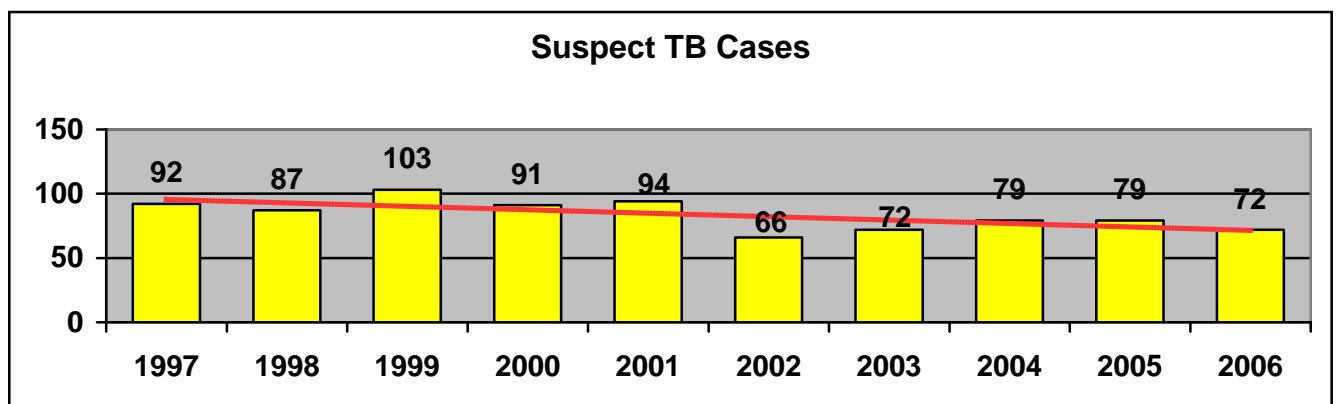
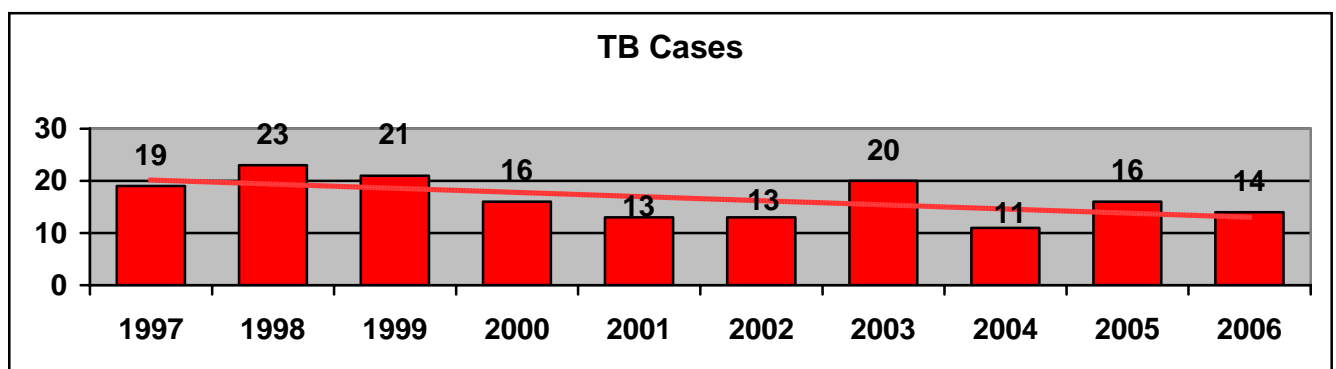
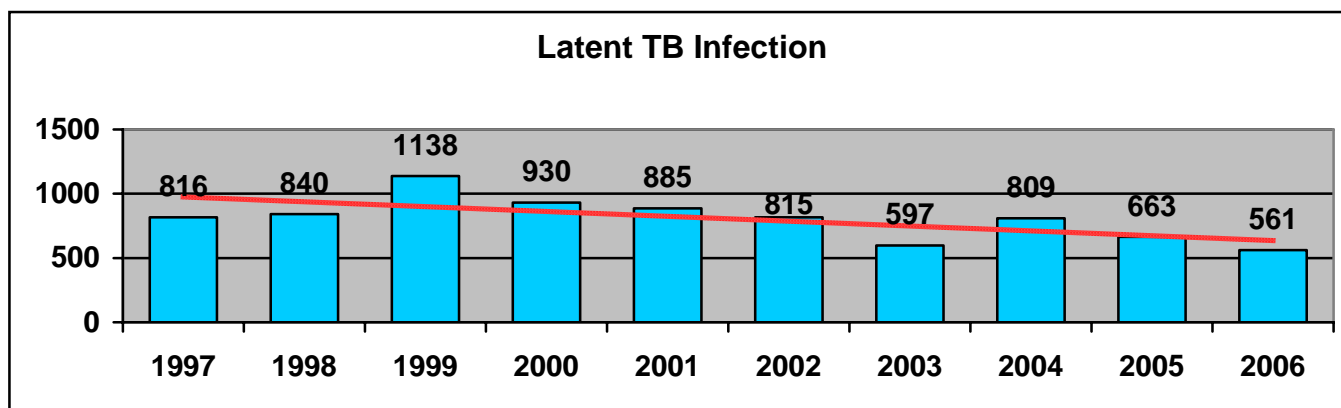
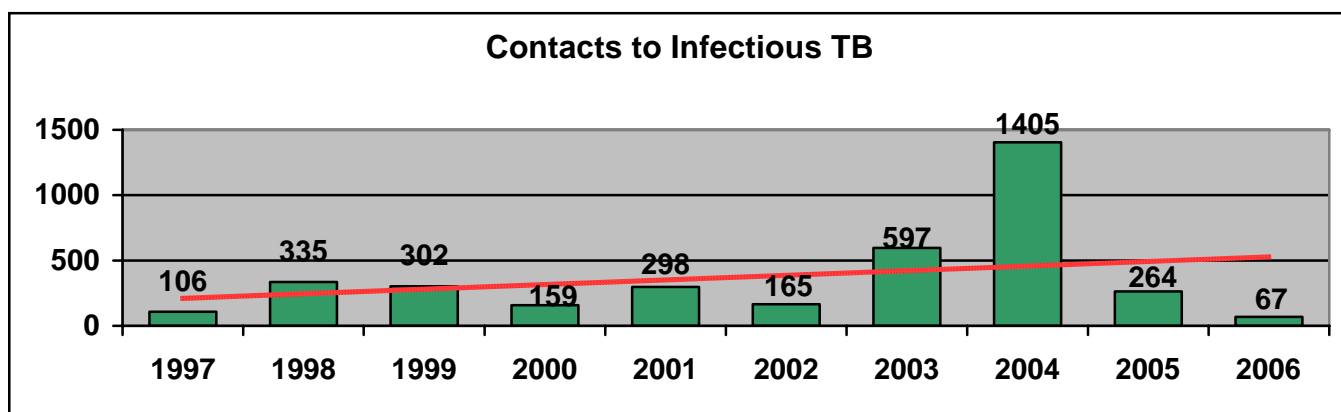


Figure 15 presents the number of patients with latent TB infection that started on a course of preventive treatment as well as the number who ultimately completed this treatment. The usual treatment is done with Isoniazid (INH) which is provided free of charge to patients statewide by the TB Control Program.

Summary of TB Control Program Caseload, SD 1997-2006





For additional information, please contact Kristin Rounds, Tuberculosis Control Program Coordinator at (605) 773-3737 or 1-800-1592-1861. More information is also available on the South Dakota TB Control Program website: www.state.sd.us/doh/tb.

Errata

ERRATA PHB Bulletin Volume 18 Number 6 page 7 Table 2:

The fifth cancer cause of death should be pancreas with 94 cases and 6%. Download corrected tables at <http://www.state.sd.us/doh/Bulletin/Dec06.pdf>

ERRATA PHB Bulletin Volume 18 Number 6, page 12 Table 4:

The American Indian/Alaskan Native statistics for all sexes should be 3.9% In situ, 29.9% Localized, 22.7% regional, 20.1% Distant, and 23.4% Unstaged. Download corrected table at <http://www.state.sd.us/doh/Bulletin/Dec06.pdf>

Infant Mortality: Assessment and Strategy to Improve the Health of South Dakota Infants – Executive Summary

In 2004, the South Dakota Department of Health (DOH) established a goal to improve birth outcomes and improve health of infants, women and children. The performance measure for this goal was to reduce the infant mortality rate in South Dakota to an incidence of no more than 6.0 infant deaths per 1,000 live births by the year 2010.

The 2003 infant mortality rate of 6.6 per 1,000 live births was the benchmark. When the 2004 data was released, it showed an infant mortality rate of 8.2 per 1,000 live births. This increase caused significant concern. The Secretary of Health appointed the following team to review the data and determine activities for reducing the infant mortality rate:

Dr. Ed Mailloux, Pediatrician at Sioux Valley Clinic
Dr. Jeffrey Boyle, OBGYN Sioux Valley Clinic
Dr. Larry Fenton, Neonatologist and USD Pediatrics Department Chair
Dr. Nanci Van Peursem, Coteau Des Prairies Clinic
Willeen Druley, Women's Health Consultant, Aberdeen Area IHS
Dr. Gail Gray, Director, Division of Health and Medical Services
Dr. Lon Kightlinger, DOH State Epidemiologist
Nancy Shoup, DOH Perinatal Nurse Consultant
Kayla Tinker, Administrator Office of Family Health
Kathlene Mueller, Administrator, Office of Data, Statistics, and Vital Records
Doneen Hollingsworth, Secretary of Health

Following is a summary of the findings of the committee. The full report can be found at <http://www.state.sd.us/doh/Stats/Documents/SDInfantMortality.pdf>.

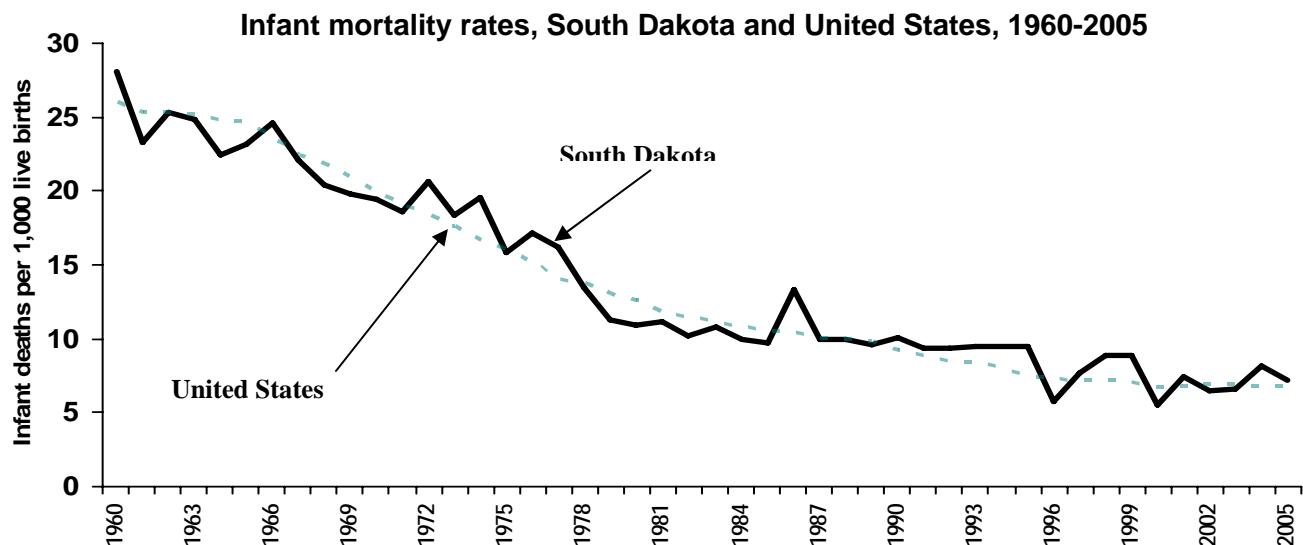
The committee found that in South Dakota infant death is more common among mothers who:

- received no prenatal care;
- smoked during their pregnancy;
- were younger than 19 years of age;
- have not finished high school;
- were American Indian; and
- lived in a frontier* county.

Comparison of Infant Mortality Rate by Selected Characteristics, 2000-2005

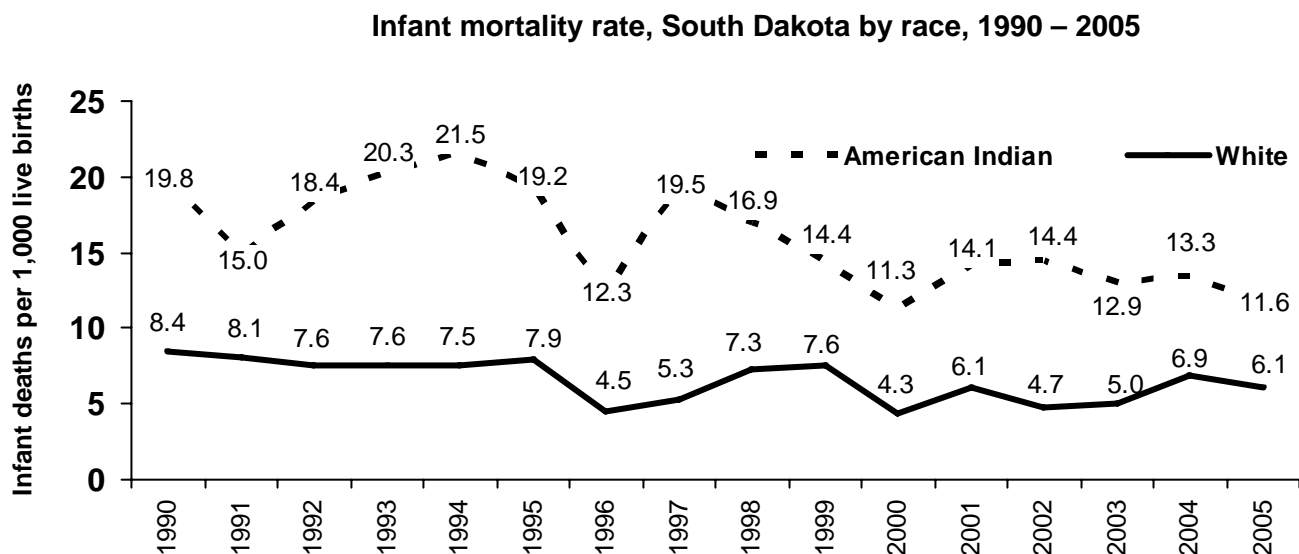
Higher Infant Mortality Rate (rate per 1,000 live births)	Lower Infant Mortality Rate (rate per 1,000 live births)
Premature birth (< 37 weeks) – 42.4	Normal gestation – 3.5
No prenatal visits – 36.0	1 or more prenatal visits – 6.6
Twins or more – 24.3	Single birth – 6.4
American Indian – 12.9	White – 5.5
Tobacco user – 10.4	Non-tobacco user – 6.1
Did not finish high school – 10.3	College graduate or higher – 4.6
Single mother – 9.1	Married mother – 5.8
Frontier county – 8.8 *	Rural county – 6.2 *
Male baby – 8.0	Female baby – 5.8

* Frontier counties have 6 or less persons per square mile. Rural counties have more than 6 persons per square mile and no large population center. Urban counties have a population center of 50,000 or more.



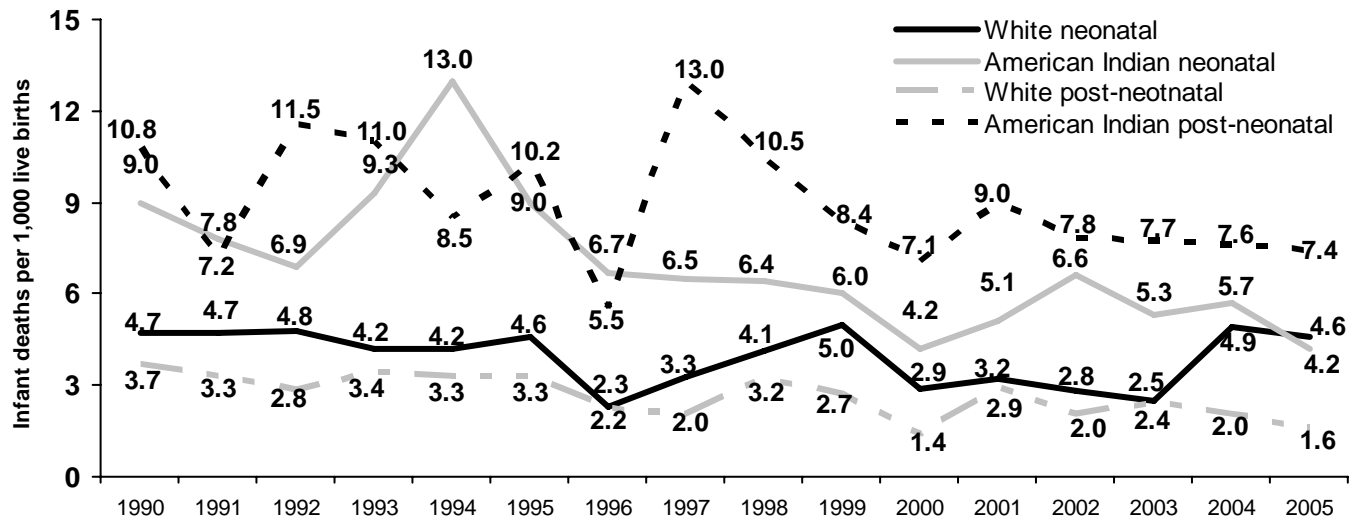
Note: U.S. 2004 and 2005 rates are provisional

INFANT MORTALITY BY RACE



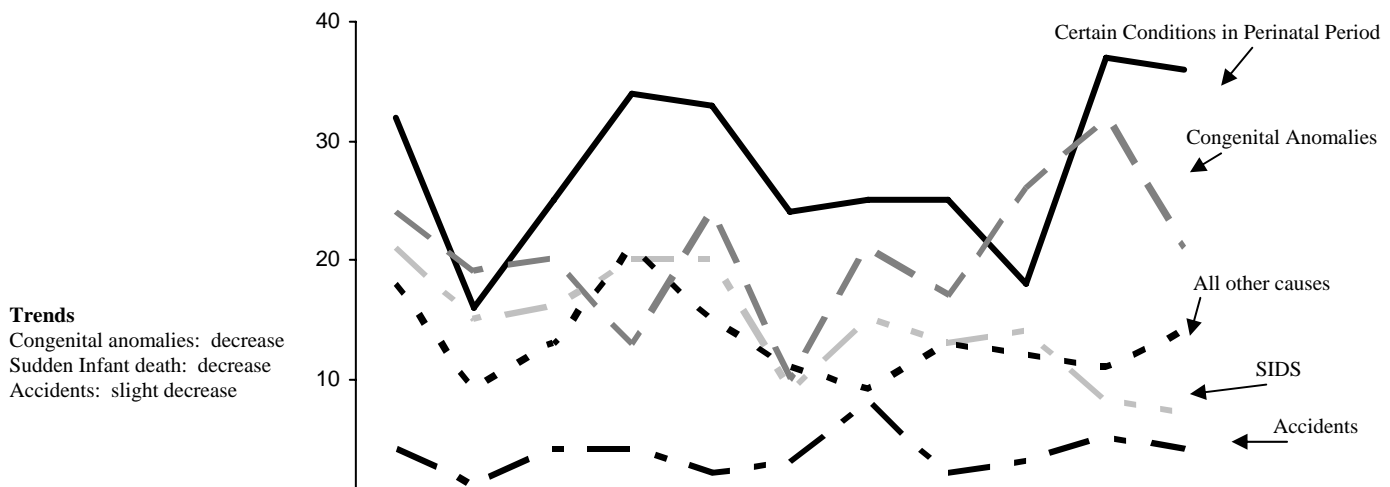
- In the United States in 2003, American Indian infant mortality rate was 8.7 compared to 5.7 for whites.
- South Dakota's infant mortality rates decreased for both whites and American Indians in 2005 after the rise in 2004. The white infant mortality rate decreased from 6.9 to 6.1 per 1,000 live births and the American Indian mortality rate decreased from 13.3 to 11.6 per 1,000 live births.
- In South Dakota, the American Indian neonatal mortality rate dropped below the white neonatal mortality rate in 2005.
- Data shows a troubling rise in infants who died in the neonatal period during the last two years in the white population.
- There continues to be disturbing disparity between the American Indian and white post neonatal mortality rate despite the decrease.

Neonatal and post-neonatal mortality by race, by age, South Dakota, 1990 – 2005



CAUSES OF INFANT MORTALITY

Causes of infant mortality, South Dakota 1995-2005

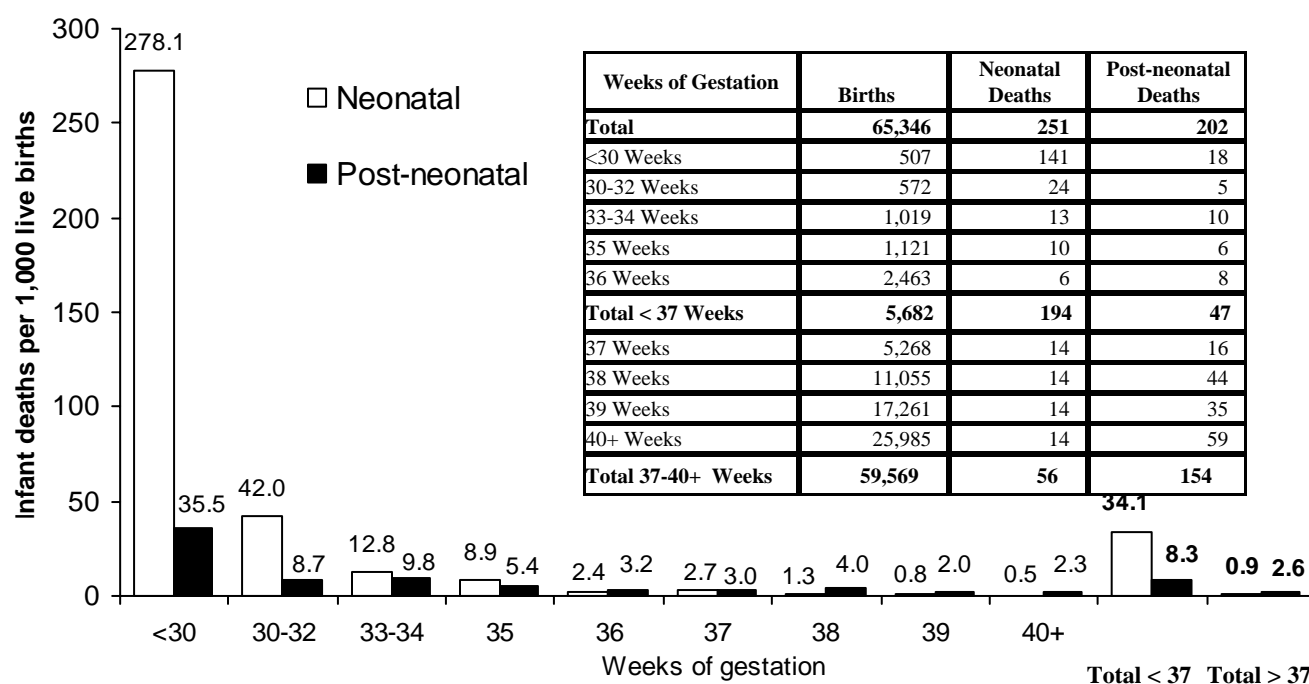


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Certain Conditions in Perinatal Period (P00-P96)	32	16	25	34	33	24	25	25	18	37	36	305
Birth asphyxia and respiratory distress conditions (P21-P28)	5	4	7	10	12	4	8	3	5	7	12	77
Disorders related to short gestation and low birthweight (P07)	10	6	5	5	6	6	6	9	6	6	10	75
Newborn affected by complications of placenta, cord, and membranes (P02)	6	1	4	1	5	5	1	2	3	4	5	37
Newborn affected by maternal complications of pregnancy (P01)	5	3	3	5	1	2	3	4	1	4	3	34
All other conditions originating in the perinatal period	6	2	6	13	9	7	7	7	3	16	6	82
Congenital Anomalies (Q00-Q99)	24	19	20	13	24	10	21	17	26	32	21	227
Congenital anomalies of heart (Q20-Q24)	11	11	4	3	6	1	7	2	6	8	7	66
Edward's syndrome and/or Patau's syndrome	3	3	3	1	5	4	0	3	1	6	3	32
All other congenital anomalies	10	5	13	9	13	5	14	12	19	18	11	129
Sudden Infant Death Syndrome (SIDS)	21	15	16	20	20	9	15	13	14	8	7	158
Accidents (V01-X59)	4	1	4	4	2	3	8	2	3	5	4	40
All other causes	18	9	13	21	15	11	9	13	12	11	14	146
TOTAL INFANT DEATHS	99	60	78	92	94	57	78	70	73	93	82	876

- For the 10 year time period, South Dakota's leading cause of infant deaths was certain conditions in the perinatal period, which includes short gestation, low birth weight, complications of pregnancy, respiratory distress, etc.
- Congenital anomalies were the second leading cause of infant death.
- SIDS (Sudden Infant Death Syndrome) was the third leading cause of infant death. Deaths due to SIDS continue to decline.
- Accidents were the fourth leading cause of infant death. Accidents include motor vehicle accidents, falls, accidental drowning or poisoning, etc.

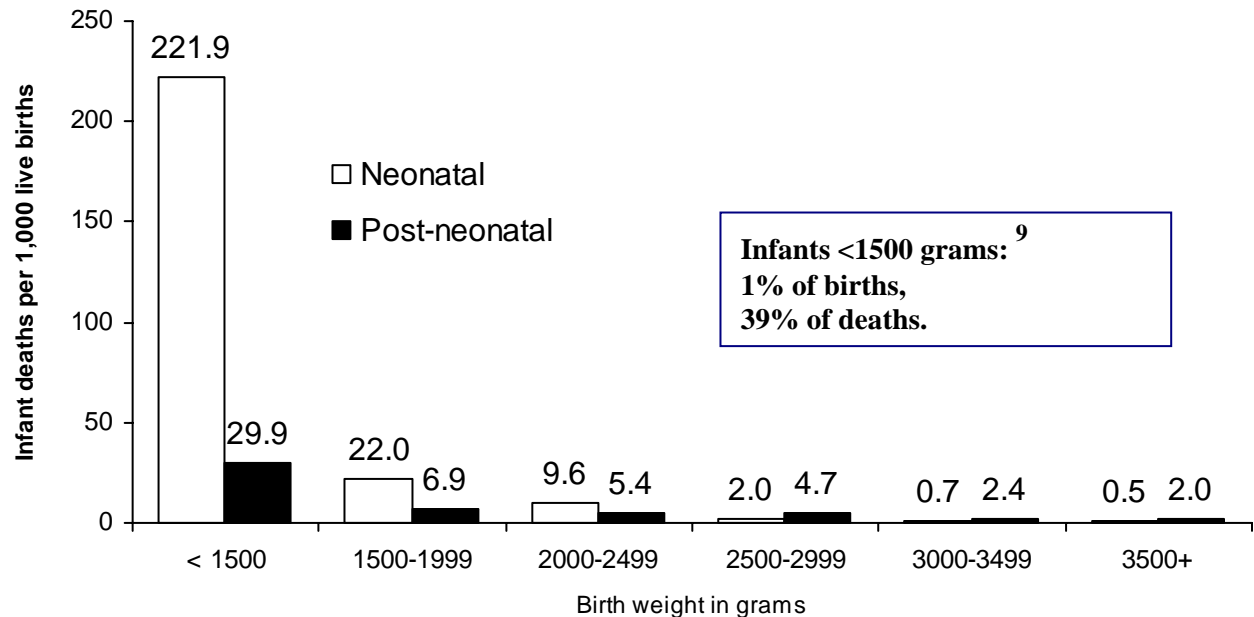
GESTATIONAL AGE

Gestation period by neonatal and post-neonatal mortality rates, South Dakota, 2000-2005



- Short gestational age was the leading cause of death of infants in South Dakota. Of the neonatal deaths occurring between 2000 and 2005, over 77 percent were of infants born before 37 weeks of gestation.
- Preterm infants are generally underweight.
- Infants that weigh less than 1,500 grams at birth were only 1 percent of the births but accounted for 39 percent of the deaths.

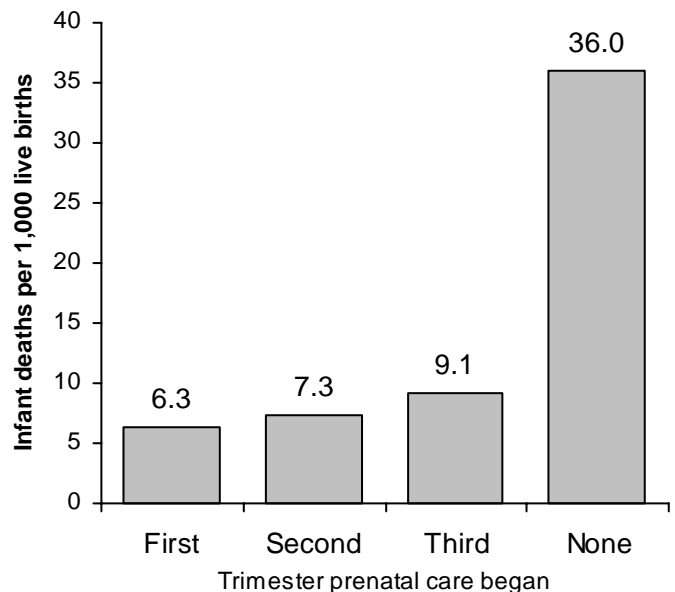
Birth weight: neonatal and post-neonatal mortality rate, South Dakota, 2000-2005



PRENATAL CARE

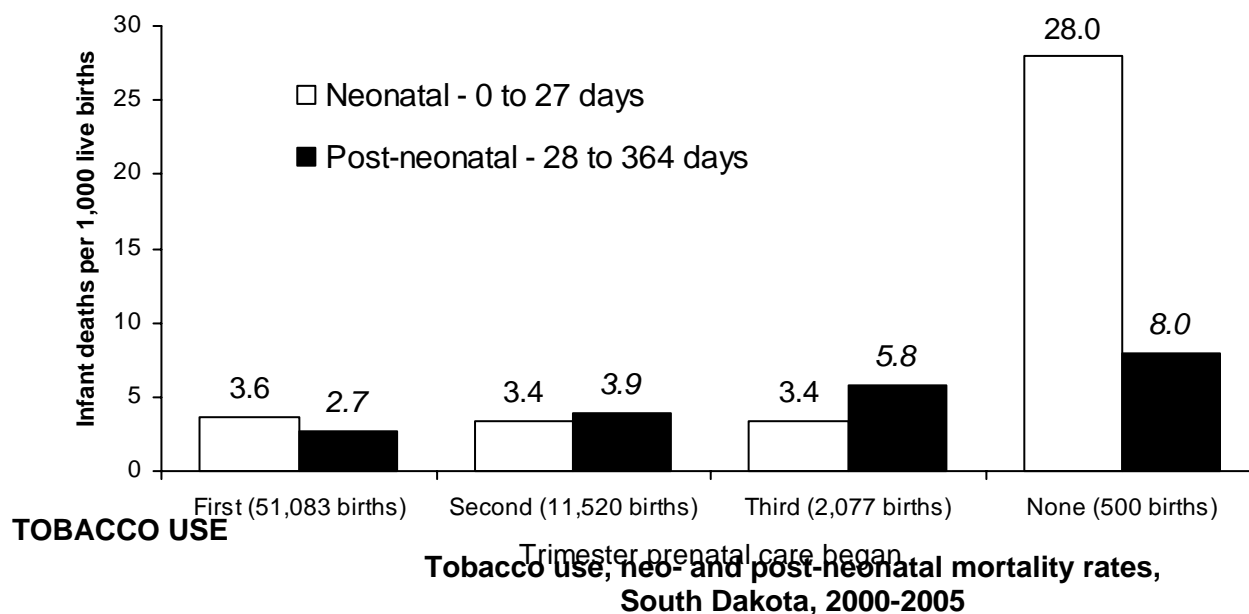
Trimester prenatal care began, South Dakota 2000-2005

- Statistics show that early and continuous prenatal care improved pregnancy and health outcomes for mother and child.
- The earlier prenatal care was received the less likely the baby was to die.
 - First trimester: 51,083 births (78%), 324 deaths, 6.3 infant mortality rate
 - Second trimester: 11,520 births (18%), 84 deaths, 7.3 infant mortality rate
 - Third trimester: 2,077 births (3%), 19 deaths, 9.1 infant mortality rate
 - None: 500 births (1%), 18 deaths, 36.0 infant mortality rate

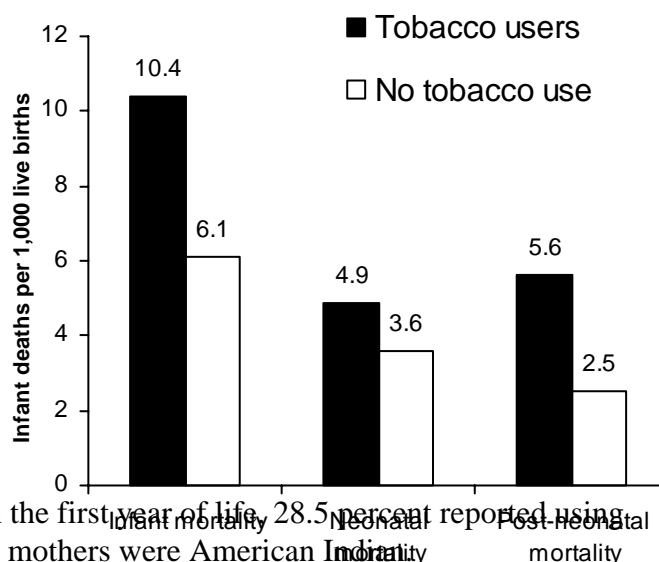


- Ninety-nine percent of South Dakota infants had some prenatal care while one percent had no prenatal care.
- The infant mortality rate was 6 times higher for those moms receiving no prenatal care than those mothers receiving prenatal care in the first trimester.
- The neonatal mortality rate was nearly eight times higher for those moms receiving no prenatal care.
- Prenatal care data shows that South Dakota lags behind other states in the region with 78 percent of pregnant women receiving first trimester care. Of the 41 reporting states in 2004, South Dakota was fifth lowest in the nation in this indicator according to National Vital Statistics Reports ⁷.

Prenatal Care: neonatal and post-neonatal mortality rates, South Dakota, 2000-2005



- Tobacco use leads to higher infant mortality rates.
- Data indicates that tobacco use contributes to lower birth weight and pregnancy complications.
 - Tobacco users: 12,367 births, 129 deaths
 - Non-users: 52,894 births, 321 deaths
 - White mothers: 17% use tobacco
 - American Indian mothers: 28% use tobacco

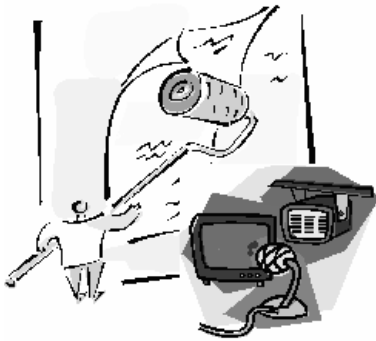


- Of the mothers whose infants died in the first year of life, 28.5 percent reported using tobacco. Forty-three percent of these mothers were American Indian.
- Of the mothers who used tobacco, 63.6 percent were unmarried and 28.2 percent had not graduated from high school.
- Nationally, cigarette smoking during pregnancy had been declining since 1989, to 10.2 percent of mothers in 2004. In 2003, 12.4 percent of births to smokers were low birth weight, compared with 7.7 percent of births to nonsmokers.
- In South Dakota, tobacco use during pregnancy had declined from 19.9 percent in 2000 to 18 percent in 2005.

- In 2005, 7.6 percent of mothers who used tobacco in South Dakota during pregnancy had a baby under 2,500 grams compared to 4.6 percent to nonsmokers.

The infant mortality work group identified six activities to improve the South Dakota infant mortality rate and the underlying disparities. Those activities are as follows:

Media Campaign - Implement a media campaign addressing signs and symptoms of pregnancy, the importance of not smoking during pregnancy, and the importance of early and regular prenatal care.



- Create culturally specific media materials for television, radio and billboards.
- Create culturally specific printed materials such as brochures, information cards and posters.
- Promote the use of the DOH QuitLine by pregnant mothers and mothers with infants under age one.
- Expand the current DOH website for pregnancy information.

Health Care Provider Training - DOH and USD Sanford School of Medicine will partner to train health care providers across the state in the following focus areas:

- *Smoking* - provide health care providers with information on the effects of smoking on the unborn child and also the negative effects of second hand smoke on the infant.
- *Recognition of sick children* - educate providers on medical markers to help them recognize sick children.
- *Early & regular prenatal care* – provide healthcare providers with information on prenatal care standards and the importance of early and regular prenatal care.



Department Of Health and Tribal Plains Healthy Start - Enhance the working relationship between the Northern Plains Healthy Start* and the DOH. Key topics such as transportation, access to care, smoking, prenatal care standards, etc. will be discussed to determine how as a team Northern Plains Healthy Start and the DOH can best improve the health of American Indian children and mothers.

**Northern Plains Healthy Start* is a targeted case management program which uses a holistic approach respecting the importance of family, extended family, physical, emotional, psycho-social and spiritual health and the continued support for Indian family values to improve birth outcomes.

Trauma - Work with the South Dakota Trauma System Steering Committee to improve medical response for sick and injured infants in rural and frontier areas.

Education for Young Mothers - Maintain and strengthen current services to teens and young moms through the Department of Health programs.

- Complete a risk assessment on all pregnant teens who seek services through DOH programs.
- Encourage early and regular prenatal care for all pregnant teens.
- Provide prenatal, postpartum and parenting education for all pregnant teens receiving Baby Care services.
- Provide intensive prenatal, postpartum and parenting education to high risk pregnant teens in Sioux Falls and Rapid City through the Bright Start program.



Publication - Publish and distribute a report on infant mortality which summarizes and establishes activities based on the data reviewed by the committee to increase awareness of the problem of infant mortality.

Infant mortality definitions

- **Infant mortality rate**: The number of infants who die within one year of birth divided by the number of infants who are born, multiplied by 1,000, expressed as the ratio of infant deaths per 1,000 live births.
- **Infant death**: death of a live-born infant less than one year (364 days) of age.
- **Neonatal death**: death of a live-born infant from birth to 27 days old.
- **Post-neonatal death**: death of an infant occurring 28 days to one year of age.

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9. The equivalents of the gram intervals in pounds and ounces are as follows:

<= 1,499 grams	=	<= 3lbs. 4ozs.
1,500 – 2,499 grams	=	3lbs. 5ozs – 5lbs. 8ozs.
>= 2,500 grams	=	>= 5lbs. 9ozs.

South Dakota Newborn Metabolic Screening Program (SDNMSP) 2006 Statistics

*By Lucy Fossen, RN, Newborn Metabolic Screening Program,
Office of Family Health, South Dakota Department of Health*

Beginning June 1, 2005, the SDNMSP expanded the mandated panel to begin screening for biotinidase deficiency (BT), congenital adrenal hyperplasia (CAH), hemoglobinopathies, amino acid disorders, fatty acid oxidation disorders, and organic acid disorders. In 2006 there were 12,362 occurring births (1) in South Dakota.

Disorder	# of presumptive positives	# newborns confirmed positive	Comments
Biotinidase Deficiency	13	3	Partial biotinidase deficiency = 3
Congenital Adrenal Hyperplasia	57	0 (classical, salt-wasting)	1 case confirmed non-classic, non-salt-wasting
Congenital Hypothyroidism	11	5	
Galactosemia	1	1	1= Duarte, variant galactosemia
Hemoglobinopathies	Disease = 1 Trait = 64 Other = 25	Disease = 1 (pending confirmation FE/OB) Trait = 64 Other (2)	Traits identified: FSA = 21 FA+ other = 17 FAC = 11 FAD/FAG= 4 FAE/O = 5 FAE = 2 VFA = 4
PKU (phenylketonuria)	4	1	
AminoAcyl Screen (amino acid, fatty acid oxidation disorders, and organic acid disorders)	185 (3)	3	MCAD = 2 MCAD, carrier = 1

(1) 2006 Statistic Data provisional, not final at the time of this report.

(2) Most common "Other" hemoglobinopathy results are AFT - indicating transfusion.

(3) Majority of abnormal screens from the AminoAcyl Screen (tandem mass spectrometry - MS/MS) requires only a repeat screen to rule out the disorder. Confirmatory testing is recommended in a small percentage of cases where the concentration of analytes are "significantly" abnormal, or concentration of analytes increase on repeat screens.

Cystic Fibrosis Screening in SD

As of June 1, 2005, Cystic fibrosis was offered as optional screening with the newborn screening panel of tests in South Dakota. In 2006, YTD average rate of participation with the mandated screens was 23%.

For more information contact Lucy Fossen, Department of Health Newborn Metabolic Screening Program Coordinator, at 605-773-3737.

South Dakota Newborn Hearing Screening Program 2006 Data

*By Terry Disburg, RN, Newborn Hearing Screening Coordinator
Office of Family Health, South Dakota Department of Health*

South Dakota continues to see an increase in the number of infants who receive a hearing screening prior to hospital discharge and before 1 month of age. In 2003, the Department of Health Newborn Hearing Screening Program reported the percentage of infants screened prior to hospital discharge and before 1 month of age was 84.08%. That total climbed to 95.38% by year end of 2006, an 11.30% increase.

Hearing loss occurs in approximately 12,000 children nationally each year, or 3 of every 1,000 births. If undetected, hearing loss can result in developmental delays. South Dakota is part of the national Early Hearing Detection and Intervention initiative which supports the early identification of infants with hearing loss through screening, audiologic and medical evaluation and enrollment in early intervention with family support services when needed.

The Centers for Disease Control and Prevention, the American Academy of Pediatrics, that American Speech-Language-Hearing Association and other health organizations recommend:

- all newborns are screened for hearing loss before **1** month of age, preferably before hospital discharge;
- all infants who did not pass both their initial and re-screening have a diagnostic audiologic and medical evaluation before **3** months of age; and
- all infants identified with some degree of hearing loss begin receiving appropriate early intervention services before **6** months of age.

South Dakota's Electronic Vital Records Screening System (EVRSS) electronically links each infant's birth certificate with the infant's metabolic screening results and hearing screening results. The link permits tracking and follow-up to assure necessary re-screensings, medical evaluations and audiological diagnostics are completed. Strong commitment by the medical community to newborn hearing screening combined with the data being captured through the EVRSS Program help to account for the increased screening numbers.

	2003	2004	2005	2006
Total # of Births	11,503	11,805	11,954	12,369
% Screened Prior to Hospital Discharge, Before 1 Month of Age	84.08%	87.29%	90.51%	95.38%
% Screened After Hospital Discharge, Before 1 Month of Age	5.05%	5.26%	4.15%	.82%
Total % Screened Before 1 Month of Age	89.13%	92.55%	94.66%	96.20%

Statewide, there are more than 170 medical clinics and eight diagnostic audiologists that have the potential of seeing an infant with a possible hearing loss. All have received training regarding data entry with the EVRSS and on their role with the medical and audiological evaluations for infants not passing their initial screenings.

When an infant is not screened prior to hospital discharge, a reason why the screening was not done is entered into the EVRSS Program. Monitoring these reasons allows the Newborn Hearing Screening Program to work at eliminating problems so the screenings can be done.

Reasons Why Newborn Hearing Screening Not Done Prior to Hospital Discharge, South Dakota, 2004-2006												
	Not Done Prior to Hospital Discharge			Screened After Discharge								
				By 1 Month			After 1 Month			Not Yet Screened		
Reason screening not done	04	05	06	04	05	06	04	05	06	04	05	06
Deceased	49	38	39	0	0	0	0	0	0	49	38	39
Discharge	191	105	89	42	34	22	6	8	3	143	63	64
Hearing equipment broken	49	78	10	13	25	4	1	11	2	35	42	4
Home birth	20	15	12	1	1	1	0	0	0	19	14	11
Infant in ICU	109	108	154	17	29	8	10	3	0	82	76	146
No screening equipment	10	6	4	2	0	2	2	0	0	6	6	2
Refused	32	19	21	0	0	1	1	0	0	31	19	20
To be screened in PCP office	813	568	52	526	387	30	49	23	0	238	158	22
Transferred	99	89	88	20	18	33	8	3	3	71	68	52
Totals	1372	1026	469	621	494	101	77	48	8	674	484	360

Many measures have been taken to decrease the reasons why screenings are not being done. A statewide media ad campaign was developed and initiated about the 1-3-6 recommendations for screening. Posters were distributed to health care facilities and meetings with follow-up correspondence were presented to medical groups. Families filing for a birth certificate also received a hearing screening brochure in their Bright Start box.

Equipment was made available to those identified residential areas of infants needing either their initial screening or a re-screening and an additional diagnostic audiologist made evaluations more manageable for rural families whose infants need screening.

For more information, contact Terry Disburg, Department of Health Newborn Hearing Screening Coordinator, at 605-773-3737.

Notice: The South Dakota **Reportable Disease List** has been updated to include the mandatory reporting of all influenza-associated hospitalizations and influenza-associated deaths. These new reporting influenza reporting requirements will mean better tracking of regular seasonal influenza and better response to an influenza pandemic.

The updated disease reporting rules (ARSD 44:20:01) are inserted in this publication and are found on the web at <http://legis.state.sd.us/rules/DisplayRule.aspx?Rule=44:20>.

For more information about influenza prevention and surveillance in South Dakota, please see the department's website at <http://flu.sd.gov>.

South Dakota Department of Health - Infectious Disease Surveillance				
Selected Morbidity Report, 1 January – 31 December 2006 (provisional)				
	Disease	2006 year-to-date	5-year median	Percent change
Vaccine-Preventable Diseases	Diphtheria	0	0	na
	Tetanus	0	0	na
	Pertussis	26	8	+225%
	Poliomyelitis	0	0	na
	Measles	0	0	na
	Mumps	296	0	na
	Rubella	0	0	na
	<i>Haemophilus influenza</i> type b	0	0	na
Sexually Transmitted Infections and Blood-borne Diseases	HIV infection	34	22	+55%
	Hepatitis B	4	3	+33%
	Chlamydia	2633	2534	+4%
	Gonorrhea	367	289	+27%
	Herpes, genital or neonatal	371	322	+15%
	Syphilis, primary & secondary	13	1	+1200%
Tuberculosis	Tuberculosis	14	13	+8%
Invasive Bacterial Diseases	<i>Neisseria meningitidis</i>	6	4	+50%
	Invasive Group A <i>Streptococcus</i>	10	21	-52%
Enteric Diseases	<i>E. coli</i> , shiga-toxin producing	50	33	+52%
	Campylobacteriosis	219	198	+11%
	Salmonellosis	134	151	-11%
	Shigellosis	395	131	+202%
	Giardiasis	97	90	+8%
	Cryptosporidiosis	86	42	+105%
	Hepatitis A	9	3	+200%
Vector-borne Diseases	Animal Rabies	37	94	-61%
	Tularemia	5	5	0%
	Rocky Mountain Spotted Fever	0	4	-100%
	Malaria (imported)	1	0	na
	Hantavirus Pulmonary Syndrome	2	1	+100%
	Lyme disease	1	1	+0%
	West Nile Virus disease	113	0	na
Other Diseases	<i>Streptococcus pneumoniae</i> , drug-resistant	4	3	+33%
	Legionellosis	5	4	+25%
	Additionally, the following diseases were reported: Chickenpox (116); Fusarium keratitis (1); Group B <i>Strep</i> , Invasive (13); Hemolytic uremic syndrome (8); Hepatitis B, chronic (14); Hepatitis C, chronic (pending); Listeria (2); MRSA, invasive (50); Q fever (2); Typhoid fever (1 - imported).			

Communicable diseases are obligatorily reportable by physicians, hospitals, laboratories, and institutions.

The **Reportable Diseases List** is found at www.state.sd.us/doh/Disease/report.htm or upon request.

Diseases are reportable by telephone, mail, fax, website or courier.

Telephones: 24 hour answering device 1-800-592-1804; for a live person at any time call 1-800-592-1861; after hours emergency 605-280-4810. **Fax** 605-773-5509.

Mail in a sealed envelope addressed to the DOH, Office of Disease Prevention, 615 E. 4th Street, Pierre, SD 57501, marked "Confidential Medical Report". **Secure website:** www.state.sd.us/doh/diseasereport.htm.

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